

January 18, 1962

MEMORANDUM:

TO: Space Science Board Staff

FROM: G. A. Derbyshire

SUBJECT: Meeting with Dr. Freeman Quimby, Chairman, Space Sciences Subcommittee on Biosciences

In accordance with the Executive Director's memorandum of January 15, 1962, I established contact with the Chairman of the Biosciences subcommittee of NASA's Space Sciences Committee, Dr. Freeman Quimby. We convened in his office in Federal Office Building #6 at 10 a.m., January 18, 1962. The essence of our conversation is as follows:

I provided him with information relating to the background of this meeting, pointing out its origins in Dr. Dryden's letter to Dr. Berkner of October 23, 1961 and the exchange of letters between Dr. Berkner and Dr. Dryden which followed culminating in Dr. Newell's letter of December 28, 1961. Dr. Quimby appeared to know something of the content of Dr. Dryden's letter of October 23, but knew nothing of any subsequent exchange. He is cooperative but visualizes the Board and its committees as a criticizing group, primarily valuable in picking holes in the NASA program rather than one which might be helpful in program review and evaluation in the broadest sense. The membership of the Biosciences Committee is as seen on the November 8, 1961 sheet provided to the SSB by Dr. Newell and the distinction between members of the committee and consultants to the committee should be noted.

He reported that the most recent meeting of this committee which occurred at the Ames Laboratory on January 8 and 9 (a meeting of which I had no official knowledge) had been most disappointing: the principal item of business had been a presentation by Dr. Melvin Calvin of the meteorite analysis program -- Dr. Calvin did not attend; also scheduled was a complete presentation of the Ames Laboratory biological program -- when this occurred on the Agenda, neither Dr. Haymaker nor Dr. Smith were available to discuss it. He reported that Dr. Pittendrigh and Dr. Lederberg had been quite critical of the meeting and of the NASA biological program in general. The next meeting of this Biosciences Committee is scheduled for April 28-29, 1962 and has requested that Mr. "Pearlman" attend to discuss the "Biology of High Energy Protons and Heavy Particles," supported by Dr. John K. Smith of Oak Ridge and Dr. E. C. Pollard of Pa. State University. This may be a 30-45 minute thumbnail discussion of this aspect of the radiation problem. Subject to Mr. Pearlman's concurrence, I agreed that this would be quite possible.

The biological program of the Office of Space Sciences is contained (i) in a November 1, 1961 "Grants and Contracts Summary Sheet"; (ii) in a paper provided to PSAC (undated) except for a section on weightlessness and radiation, both of which are somewhat dependent on the manned space flight program; and (iii) in a paper "Extraterrestrial Life", presented by Dr. Quimby at the AAAS meeting on December 1, 1961. Copies of these papers were provided

to me. In addition, Dr. Quimby has just prepared a summary of projected work and interested qualified institutions which will be provided to me as soon as he has the opportunity to have copies made.

He indicated that in his opinion our committees must become familiar with their programs before it is possible for them to be of any substantive assistance. It was his feeling that the material to enable this to happen was contained in the documents cited above.

He reported that the space biological program suffered a major financial cut in the Bureau of the Budget's review just completed, i.e., three million dollars or 30%. Two items completely eliminated from their request at one million each, recommended the establishment of two institutions for extraterrestrial biology, one at Stanford under Lederberg and the other at the University of California under Calvin. The budget for the current fiscal year is five million. For the next year it now stands at seven million, which will leave them critically short in his opinion. He suggests this would be one area in which the Space Science Board and the biology committees could give them very great assistance in restoration of these funds.

He reported that Biosciences is now competing in all respects for space with all areas of space science insofar as flights, vehicles, pad space, recovery facilities, etc; he noted in the case of recovery facilities, that this is not a critical item, since few other space science experiments require recovery. This appears to be a bone of contention between biology as represented by Quimby and some other areas of Newell's shop as represented by Nicolaidis.

We concluded our discussion with a resume of the Ames Laboratory program. Source: not revealed, although presumably it did originate from the Biosciences Committee meeting mentioned. Ames has plans for a total of 66 professional employees on its staff and a total complement of 105 people including supporting personnel. Its biological program is divided into three parts: Exobiology - 6 professionals and whose plans for expansion are unknown; Environmental Biology - current strength unknown, plans for 20; Bio Technology - current strength unknown, plans unknown.

In Exobiology it plans to explore: (1) Origins of life; (2) Life synthesis; (3) Life detectors; (4) DNA problems; (5) Cellular membrane models; (6) Molecular lipid studies; (7) Cellular biochemistry; (8) Protomoids a la Sydney Fox; (9) Meteorite analysis.

Environmental biology includes: (1) Microbiology; (2) Sub vertebrate experimentation; (3) Pathology; (4) Physiology; (5) Radio biology; (6) Zoology; (7) Biophysics; (8) Neuroendocrinology; (9) Neuro Physiology; (10) Behavioral sciences; (11) Endocrino biochemistry; (12) Vestibular and audio studies; (13) Immuno chemistry; (14) Genetics; (15) Enzyme chemistry.

Bio Technology - Syd Gerathewohl, Director: (1) Human performance requirements; (2) Engineering psychology; (3) Human factor engineering; (4) Human transfer functions; (5) Information presentation; (6) Man-machine integration; (7) Life support and protective systems; (8) Learning, perceptual and motor skills; (9) Information requirements; (10) Task and job characteristics; (11) Psychophysiology; (12) Biodynamics; (13) Bionics.

I inquired whether or not these programs were approved and what the approval process was. Dr. Quimby reported that insofar as he knew the program was approved by Smith de France, Director of Ames Laboratory. He knew of no other approval required. The biological program has not been referred as far as he knew to others in the Biosciences for review and comment. He surmised that Dr. Seamans may have some approval function, although this part of the procedure was unknown to him. He pointed out that the activity of the Ames Laboratory (insofar as biology is concerned) is directed towards the long range view. The Laboratory will not be tasked by the MSCC nor will it be governed by the needs of the immediate program.

Some sidelights which may be of interest: (1) during the Steering committee meeting there was a briefing on the Exobiology program in some detail, however, when it came time to discuss the overall program of the Laboratory, neither the Director nor the Deputy Director were available although they had previously been in attendance; (2) the Biosciences subcommittee was most critical towards the split in space medicine and fundamental biology which now existed as a result of NASA reorganization. As a result of this Dr. Quimby is in the process of writing a memorandum to Dr. Seamans suggesting the appointment of a biology coordinator directly under Seamans or the establishment of a biology steering committee consisting of Roadman, Voris, Quimby and Jacobs; (3) a chap named Bob Smith (unknown to me) is being proposed by Orr Reynolds as Newell's Director of Biosciences. Quimby was originally opposed to him, however, has since changed his mind as a result of what he considered to be a scholarly article in a current issue of Physiological Review and is prepared now to reconsider his recommendation to Newell.

There was some discussion, although very little of the January 25 meeting of our people with Newell and his biology staff. I indicated that I felt the basic purpose of the meeting was to bring our people up to date on what was happening in the field of biology in the Office of Space Sciences and perhaps to serve as the first meeting of the Biology Steering Committee within the Space Science Board. I didn't refer to the question of the appointment of a competent scientist to Newell's biology post.

Distributed to: H. Odishaw, R. C. Peavey, J. P. T. Pearman, J. Orlen, E. R. Dyer, S. Ruttenberg